

AMENDMENTS TO THE CLAIMS

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double brackets indicating deletions.

Listing of the Claims

1. (Currently Amended) A ~~recording~~ computer readable medium including recorded data, comprising:

a control data area including pits formed along tracks, with data recorded therein, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are ~~substantially~~-formed as straight pits, and the wobbled pits are formed at ~~least one of~~ intermittently and alternately with the straight pits within the control data area, and wherein the control data area includes a plurality of data units, and the wobbled pits are formed in at least one data unit preceded by the straight pits or followed by the straight pits.

2. (Currently Amended) A method of forming a recording medium, comprising:

forming pits in a control data area along tracks, with data recorded therein, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are ~~substantially~~-formed as straight pits, and the wobbled pits are formed at ~~least one of~~ intermittently and alternately with the straight pits within the control data area, and wherein the control data area includes a plurality of data units, and the wobbled pits are formed in at least one data unit preceded by the straight pits or followed by the straight pits.

3. (Currently Amended) A method of reproducing data from a recording medium, comprising:

detecting control information recorded in pits formed along tracks in a control data area, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are ~~substantially~~ formed as straight pits, and the wobbled pits are formed at ~~least one of~~ intermittently and alternately with the straight pits within the control data area, and wherein the control data area includes a plurality of data units, and the wobbled pits are formed in at least one data unit preceded by the straight pits or followed by the straight pits; and ~~generating~~ utilizing the control information to reproduce main data recorded with modulation in straight pits formed along tracks of a main data area of the recording medium.

4. (Previously Presented) The method according to claim 3, wherein said detecting step comprises:
converting signals reflected from the wobbled pits into electrical signals;
and
extracting the control information by applying the electrical signals to a logic circuit.

5. (Currently Amended) The method according to claim 4, further comprising:
reproducing the main data using the ~~generated~~ control information, and outputting the reproduced main data.

6. (Previously Presented) The method according to claim 3, wherein said detecting step detects the control information recorded in pits from a difference signal between a right and a left electric signals, generated by a beam reflected from the pits formed along the tracks.

7. (Previously Presented) The method according to claim 6, wherein said detecting step further detects the main data from a high-frequency electric signal generated by a beam reflected from the straight pits.

8. (Currently Amended) A method of recording data on a recording medium, comprising:

recording data in pits formed along tracks in a control data area, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are ~~substantially~~ formed as straight pits, and the wobbled pits are recorded ~~at least one of~~ intermittently and alternately with the straight pits within the control data area.

9. (Currently Amended) An apparatus for reproducing data from a recording medium, said apparatus comprising:

a detection unit ~~adapted~~ to detect control information recorded in pits formed along tracks in a control data area, with data recorded therein, wherein pits in some portions of the tracks are formed as wobbled pits, pits in other portions of the tracks of the control data area are ~~substantially~~ formed as straight pits, and the wobbled pits are recorded ~~at least one of~~ intermittently and alternately with the straight pits, wherein the control data area includes a plurality of data units, and the wobbled pits are formed in at least one data unit preceded by the straight pits or followed by the straight pits, and wherein the detection unit converts signals reflected from the pits into electric signals; and

a signal processor, coupled to the detection unit, ~~adapted~~ to process the electric signals to generate the control information and to process main data recorded with modulation in straight pits formed along tracks of a main data area of the recording medium.

10. (Canceled)

11. (Currently Amended) The apparatus according to claim 9, wherein the signal processor ~~generates-is to generate~~ the control information from low-frequency components and ~~generates-generate~~ the main data from high-frequency components.

12. (Currently Amended) The apparatus according to claim 9, further comprising:

a controller, coupled to said detection unit and said signal processor, to control the detection of the control information and the processing of the main data, wherein the controller ~~controls~~ is to control said signal processor to output the main data based on the control information.

13. (Currently Amended) The apparatus according to claim 12, wherein the controller ~~controls~~ is to control said detection unit to detect the control information by a push-pull method.

14. (Currently Amended) The ~~recording~~ computer readable medium according to claim 1, wherein the data includes protection information used for controlling reproduction and/or recording of main data.

15. (Previously Presented) The method according to claim 2, wherein the data includes protection information used for controlling reproduction and/or recording of main data.

16. (Previously Presented) The method according to claim 3, wherein the control information includes protection information for controlling reproduction and/or recording of main data, and wherein the detecting step detects the protection information.

17. (Previously Presented) The method according to claim 8, wherein the data includes protection information used for controlling reproduction and/or recording of main data.

18. (Currently Amended) The apparatus according to claim ~~[[12]]~~ 9, wherein the control information includes protection information used for controlling reproduction and/or recording of the main data, and

wherein the controller ~~controls~~ is to control the reproduction of the main data in response to the protection information.

19. (Currently Amended) The ~~recording~~ computer readable medium according to claim 1, wherein the data in the control data area is recorded in the wobbled pits by bi-phased modulation.

20. (Currently Amended) The ~~recording~~ computer readable medium according to claim 14, wherein the protection information is repeatedly encoded in plural arrays of the wobbled pits.

21. (Currently Amended) The ~~recording~~ computer readable medium according to claim 1, wherein the control data area comprises arrays of the wobbled pits and arrays of the straight pits periodically.

22. (Currently Amended) The ~~recording~~ computer readable medium according to claim 1, wherein arrays of the wobbled pits and arrays of the straight pits in the control data area are of different length.

23. (Currently Amended) The ~~recording~~ computer readable medium according to claim 1, further comprising:

a main data area including main data recorded with modulation in straight pits formed along tracks.

24. (Previously Presented) The method according to claim 2, wherein the data in the control data area is formed in the wobbled pits by bi-phased modulation.

25. (Previously Presented) The method according to claim 15, wherein the same protection information is repeatedly encoded in plural arrays of the wobbled pits.

26. (Previously Presented) The method according to claim 2, wherein the control data area comprises arrays of the wobbled pits and arrays of the straight pits periodically.

27. (Previously Presented) The method according to claim 2, wherein arrays of the wobbled pits and arrays of the straight pits in the control data area are of different length.

28. (Previously Presented) The method according to claim 3, wherein the detecting step detects the control information recorded in the wobbled pits by bi-phased modulation, in the control data area.

29. (Previously Presented) The method according to claim 3, wherein the detecting step detects arrays of the wobbled pits and arrays of the straight pits having different length respectively in the control data area.

30. (New) The computer readable medium according to claim 1, wherein the wobbled pits are formed in more than two data units different from a first data unit.

31. (New) The computer readable medium according to claim 30, wherein the plurality of data units comprise one address unit, and the wobbled pits are formed in more than two data units different from the first data unit within the address unit.

32. (New) The computer readable medium according to claim 31, wherein the wobbled pits are formed in a plurality of address units.

33. (New) The method according to claim 2, wherein the forming step forms the wobbled pits in more than two data units different from a first data unit.

34. (New) The method according to claim 33, wherein the forming step includes comprising the plurality of data units into one address unit, and wherein the wobbled pits are formed in more than two data units different from the first data unit within the address unit.

35. (New) The method according to claim 34, wherein the wobbled pits are formed in a plurality of address units.

36. (New) The method according to claim 3, wherein the detecting step includes detecting the wobbled pits formed in more than two data units different from a first data unit.

37. (New) The method according to claim 36, wherein the plurality of data units comprise one address unit, and wherein the detecting step includes detecting the wobbled pits formed in more than two data units different from the first data unit within the address unit.

38. (New) The method according to claim 37, wherein the wobbled pits are formed in a plurality of address units, and wherein the detecting step includes detecting the wobbled pits formed in the plurality of address units.

39. (New) The apparatus according to claim 9, wherein the detection unit is to detect the wobbled pits formed in more than two data units different from a first data unit.

40. (New) The apparatus according to claim 39, wherein the plurality of data units comprise one address unit, and wherein the detection unit is to detect the wobbled pits formed in more than two data units different from the first data unit within the address unit.

41. (New) The apparatus according to claim 40, wherein the wobbled pits are formed in a plurality of address units, and wherein the detection unit is to detect the wobbled pits formed in the plurality of address units.

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END OF CLAIM LISTING

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